WE CLAIM:

1. An apparatus for coating a plurality of semiconductor devices, comprising:

a mold housing comprising a formation cavity arranged to hold semiconductor devices, said formation cavity further arranged so that a coating material can be introduced into said formation cavity, said coating material at least partially covering said semiconductor devices.

2. The apparatus of claim 1, wherein formation cavity is arranged such that said coating material is introduced by injection into said formation cavity.

3. The apparatus of claim 1, wherein said formation cavity is arranged such that the coating material substantial fills said formation cavity.

4. The apparatus of claim 1, wherein said mold housing comprises a bottom rigid block support and a top rigid block support arranged over said bottom rigid block support with a space between the two to at least partially define said formation cavity.

5. The apparatus of claim 1, wherein said semiconductor devices comprise light emitting diodes (LEDs).

6. The apparatus of claim 1, wherein said coating material comprises light conversion particles distributed in a curable epoxy, silicone or other polymer.

7. The apparatus of claim 4, wherein said semiconductor devices are positioned on said top surface of said bottom block support, within said formation cavity.

8. The apparatus of claim 4, further comprising a first double sided adhesive film on the top surface of said bottom rigid block support and a second double sided adhesive film on the bottom surface of said top rigid block support, said semiconductor devices arranged on said first or second adhesive films.

9. The apparatus of claim 8, wherein said first and second double sided adhesive films do not bond to said curable coating material.

10. The apparatus of claim 1, further comprising a spacer between said bottom and top rigid block supports to maintain the space between the two.

11. The apparatus of claim 1, wherein said mold is arranged so that said curable coating material can be cured or otherwise hardened in said formation cavity, at least partially embedding said semiconductor devices in said coating material.

12. The apparatus of claim 11, wherein said mold is arranged so that said cured or hardened coating material with embedded semiconductor devices can be removed from said formation cavity and said semiconductor devices separated with a layer of coating material remaining on each of said semiconductor devices.

13. A method for coating a plurality of semiconductor

devices, comprising:

providing a mold with a formation cavity;

mounting a plurality of semiconductor devices within said mold formation cavity;

injecting or otherwise introducing curable coating material into said mold to fill said mold formation cavity and at least partially cover said semiconductor devices; and

curing or otherwise treating said coating material so that said semiconductor devices are at least partially embedded in said cured coating material.

14. The method of claim 13, further comprising removing said cured or treated coating material with said embedded semiconductor devices from said formation cavity.

15. The method of claim 14, further comprising separating said embedded semiconductor devices so that each is at least partially covered by a layer of said cured or treated coating material.

16. The method of claim 13, wherein said formation cavity is at least partially defined by parallel upper and lower surfaces, said semiconductor devices arranged on one or both of said upper and lower surfaces.

17. The method of claim 13, wherein said curing or otherwise treating said semiconductor material comprises one of the methods from the group comprising heat curing, optical curing or room temperature curing.

18. The method of claim 15, wherein said semiconductor devices are separated by dicing or scribe and break.

19. The method of claim 15, wherein the said semiconductor devices are separated such that said layer of cured or otherwise treated coating material conforms to the shape of said semiconductor device.

20. An apparatus for coating light emitting diodes (LEDs), comprising:

a mold housing comprising a formation cavity arranged to hold a plurality of LEDs, said formation cavity comprising at least a top and bottom surface, said LEDs arranged on said bottom or top surface, said mold housing arranged so that a matrix material can be introduced into said formation cavity at least partially covering said LEDs.

21. The apparatus of claim 20, wherein said formation cavity is arranged so that said matrix material can be injected into said formation cavity.

22. The apparatus of claim 20, wherein said matrix material substantially fills said formation cavity.

23. The apparatus of claim 20, further comprising a bottom rigid block support and a top rigid block support arranged over said bottom rigid block support with a space between the two, the bottom of said top block support being said top surface of said formation cavity and the top of said bottom block support being said bottom surface of said formation cavity.

24. The apparatus of claim 20, wherein said matrix material comprises curable material with uniformly

distributed light conversion particles.

25. The apparatus of claim 24, wherein said curable material is an epoxy or silicone.

26. The apparatus of claim 20, wherein said matrix material comprises phosphor light conversion particles.

27. The apparatus of claim 20, further comprising a first double sided adhesive film on said top surface and a second double sided adhesive film on said bottom surface.

28. The apparatus of claim 20, further comprising a spacer between said bottom and top rigid block supports to maintain the space between the two.

29. The apparatus of claim 20, wherein said mold is arranged so that said curable coating material can be cured to at least partially embed said semiconductor devices in said cured coating material.

30. The apparatus of claim 20, wherein said mold is arranged so that said cured coating material with embedded semiconductor devices can be removed from said formation cavity and said semiconductor devices separated with a layer of cured coating material.

31. The apparatus of claim 20, wherein said LEDs each have a first contact on their bottom surface and a second contact on their top surface, said LEDs arranged on said formation cavity bottom surface and said formation cavity top surface on said LEDs' second contact.

32. The apparatus of claim 20, further comprising a low tack adhesive sandwiched between each of the LEDs and the said top or bottom surface upon which they are mounted, said low tack adhesive reducing underflow of said matrix material.

33. A method for coating a plurality of light emitting diodes (LEDs), comprising:

providing a mold with a formation cavity;

mounting a plurality of LEDs within said mold formation cavity;

injecting or otherwise introducing a curable matrix material into said mold to fill said formation cavity and at least partially cover said LEDs;

curing said matrix material so that said LEDs are at least partially embedded in said matrix material.

34. The method of claim 33, further comprising removing said cured matrix material and said embedded LEDs from said formation cavity and separating said embedded LEDs so that each is at least partially covered by a layer of said cured matrix material.

35. The method of claim 33, wherein said matrix material contains light conversion particles.

36. The method of claim 33, wherein said formation cavity is at least partially defined by parallel upper and lower surfaces, said LEDs arranged on one or both of said upper and lower surfaces.

37. The method of claim 33, wherein said curable matrix material is cured by one of the methods from the group

comprising heat curing, optical curing or room temperature curing.